FROLOV, K.K.

Wages of highway transport workers. Avt. transp. 43 no.8:26-28 Ag '65. (MIRA 18:9)

1. Starshiy inspektor Gosudarstvennogo komiteta Soveta Ministrov SSSR po voprosam truda i zarabotnoy platy.

FROLOV, K.K.; GAVRILOV, S.V.

Wages of automotive transportation workers. Avt. transp. 43 no.9:34-35 S '65. (MIRA 18:9)

1. Starshiy inspektor Gosudarstvennogo komiteta Soveta Ministrov po voprosam truda i zarabotnoy platy (for Frolov). 2. Starshiy inzhener otdela truda i zarabotnoy platy Ministerstva avtomobil'nogo transporta i shosseynykh dorog RSFSR (for Gavrilov).

NECHAYEV, K.A.; NOVOSLAVSKAYA, O.Ya.; FROLOV, K.M.; KHANINSON, Ya.G.; VOLKOVA, K.V., red.; VOROTILINA, L.I., tekhn. red.

[Novosibirsk; notable places and sights] Novosibirsk; pamiatnye mesta i dostoprimechatel'nosti. Novosibirsk, Novosibirskoe knizhnoe izd-vo, 1961. 174 p. (MIRA 15:8)
(Novosibirsk--Guidebooks)

FROLOV, Konstantin Pavlovich; PUSHKANTSEV, Boris Naumovich; BYALYY, Semen Mikhaylovich; RASHCHUPKINA, L.I., red.; MAYOROV, V.V., tekhn. red.

[Receiving and processing food and forage corn at grain receiving stations] Priem i obrabotka prodovol'stvenno-furazhnoi kukuruzy na khlebopriemnykh punktakh. Moskva, 1962. 11 p. (MIRA 16:6)

1. Moscow. Vystavka dostizheniy narodnogo khozyaystva SSSR. Pavil'on "Khraneniye i pererabotka zerna."
(Corn (Maize)) (Grain elevators)

PYSHKIN, Viktor Petrovich, inzh.; KARABANOV, Sergey Aleksandrovich, inzh.; PONOMAREV, Vladimir Aleksandrovich, inzh.; FROLOV, K.P., inzh., red.; VOLKOV, P.N., red.; SAVEL'YEVA, Z.A., tekhn. red.

[Manual for the mechanic of a grain receiving station] Spravochnik mekhanika khlebopriemnogo punkta. Pod red. K.P. Frolova. Moskva, Zagotizdat, 1963. 243 p. (MIRA 16:9)
(Grain handling machinery)

FROLOV, K.P., inzh.

Scraper buckets with 76m^3 capacity. Transp.stroi. 9 no.8:55 Ag '59. (MIRA 13:1)
(United States--Scrapers)

FROLOV, K.P., inzh.

Braced mobile cranes for assembling span structures of high bridges. Transp.stroi. 9 no.9:55 S '59.
(MIRA 13:2)
(United States--Cranes, Derricks, etc.)
(Mississippi River--Bridges)

FROLOV, K.P., inzh.

Tunneling equipment. Transp. stroi. 9 no.11:53 N '59 (MIRA 13:3)
(Tunneling--Equipment and supplies)

FROLOV, K.P., inzh.

Laboratory for testing reinforced concrete construction elements.
Transp.stroi. 9 no.12:53 D '59. (MIRA 13:5)
(United States--Reinforced concrete--Testing)

FROLOV, K.P.

A book which is useful for engineers and technicians. Avtom., telem. i sviaz' 4 no.4:46 Ap '60. (MIRA 13:6)

1. Pomoshchnik dorozhnogo revizora po bezopasnosti dvizheniya Kazanskoy dorogi.
(Railroads--Signaling)

FROLOV, K.P., inzh.

Cable suspended railroad over the English Channel. Transp. stroi. 11 no.10:55-56 O '61. (MIRA 14:10)
(English Channel--Railroad bridges)
(Railroads, Single-rail)

FROLOV, K.V.

FROLOV, K.V., inzh.

Contactless tensiometry. Energomashinostroenie 3 no.12:42 D '57. (MIRA 11:1)

(Turbines) (Tensiometers)

FROLOV, K. V.

"On the modelation of the resonance effects of some autonomous nonlinear oscillatory system."

Paper presented at the Intl. Symposium on Nonlinear Vibrations, Kiev, USSR, 9-19 Sep 61

Institute for the Research of Machines of the USSR Academy of Sciences, Moscow, USSR

S/179/61/000/005/009/022
E191/E481

AUTHORS: Kononenko, V.O. and Frolov, K.V. (Moscow)

TITLE: On the interaction between a nonlinear vibrating system and an energy source

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, v.5, 1961, 69-76

TEXT: Characteristic features of the interaction between a nonlinear oscillating system and a source of energy were examined by S.S.Korablev (Ref.1: Trudy IMASh AN SSSR, 1959, v.1) and one of the present authors, V.I.Kononenko (Ref.2: Izv. AN SSSR, OTN, Mekhanika i mashinostroyeniye, 1960, no.6). Some of the results obtained were verified by experiment with a mechanical model. The present paper reports the examination of the problem with the help of an electronic model simulating the nonlinear mechanical oscillating system considered in the papers quoted above. Briefly, the mechanical system has a nonlinear elastic force obeying a law with a linear and a cubic term. The vibrations are excited by the inertia forces of an unbalanced mass rotated by a motor with a

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with a known torque/speed characteristic. Changing over to electronic models became possible after verification, furnished in the earlier experiments already quoted, that the static characteristics of energy sources could be substituted in solving the dynamic problem. Although electronic models inherently embody a convenient variability of parameters, the range investigated did not exceed that adopted in the author's earlier paper (Ref.2) when constructing the approximate solutions of nonlinear equations. The only exception was the parameter of nonlinearity which is the constant factor in the cubic term in the relation between the force and the displacement. This was varied in a larger range to reveal the behaviour of the system in the presence of a substantial nonlinearity. The scale factors are derived from the permissible maxima of the electrical variables and introduced into the equations of motion of the mechanical system thus deriving a system of two equations for which the analogue circuit was devised. The sine and cosine functions required the special blocks designed by V.S.Tarasov and his team (Ref.3: Nauchn.-tekhn. informats. vyl. LPI, 1959, no.5; and Ref.4: Elektrichestvo, 1960, no.4). The programme of the investigation

On the interaction between ...

had three aims. (a) The study of the steady-state conditions, where it is described by a harmonic displacement of the mass at the forced frequency on which a small periodic function of time is superimposed and the motion of the exciting unbalance has another small periodic function superimposed upon a uniform rotation. In particular, the nature of steady-state conditions with substantially increased nonlinearity and at a substantial departure from resonance was of interest as representing a violation of the conditions on which the approximate analytical solutions were based. (b) The clarification of non-steady state which arises near the limits of the stability region when the system changes over from one steady-state condition to another. (c) The discovery of any peculiarities in the motion of the system when the steady-state criteria established analytically are not fulfilled. The effect of the exciting motor characteristic was the centre of attention. The slope of the characteristic curve could be easily varied. The technique of experimentation permitted the construction of resonance curves for rising and falling values of the forcing frequency separately. Transient

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On the interaction between ...

conditions arising in switching on did not form part of the investigation but those which occurred between two steady states were examined. Owing to the pronounced difference between the resonance phenomena in systems with stiffening and unstiffening nonlinearity terms in the restoring force equation, each case was examined separately. The results of the experiments are given in graphs where the amplitude is plotted against the forcing frequency and in oscillograms of displacement against time (for the non-steady states). Without revealing any new salient features, the results of these electronic simulator tests confirm the basic propositions about the properties of nonlinear systems with nonideal sources of energy found earlier (Ref.2). Emerging from the limitations imposed by the mathematical methods used earlier did not yield substantially new results. There are 12 figures and 4 Soviet-bloc references.

SUBMITTED: June 27, 1961

Card 4/4

FROLOV, K.V. (Moskva)

Self-excited vibrations considering properties of the energy source. Izv.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr no.1:83-86 Ja-F '62. (MIRA 15:3)

(Vibration)

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E191/E413

24 4200

AUTHORS: Kononenko, V.O., Frolov, K.V. (Moscow)

TITLE: On the resonance properties of a parametric oscillating system

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, no.3, 1962, 73-80

TEXT: Reference is made to a previous paper by the senior author (Ref.1: Izv. AN SSSR, OTN, Mekhanika i mashinostroyeniye, no.5, 1960) wherein steady-state conditions were examined subject to limitations determined by the approximate methods of analysis employed. In the present paper, a parametric oscillating system with a low depth of parameter modulation is considered on the assumption that the source of energy which imposes the periodic (or almost periodic) variation of the parameter of the system can interact with the oscillating system so that the oscillations become dependent on the properties of the energy source. The physical oscillating system considered is an elastic bar subject to a periodic force in its axial direction, so that its bending

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stiffness changes periodically. Under certain conditions, as a result of the periodic variations of stiffness, parametric oscillations of the bar in the direction transverse to its axis take place. Details of the system are given in Ref.1. The equations of motion are formulated, and its simulation by an analogue computer is illustrated with the help of a block diagram and discussed. The equations of motion contain a term with the cubed transverse coordinate. The coefficient of this term is the nonlinearity parameter which, in the present paper, is examined within a wider range than before. The purposes of the simulator studies were (a) to establish the motion of the system under steady-state conditions at positive, negative and zero values of nonlinearity; (b) to clarify the nature of the nonstationary conditions of motion arising near the boundaries of stability and corresponding to the transition from one steady state to another and (c) to observe the motion of the system when the conditions of stability are not fulfilled. The energy source characteristic curve is conceived as a linear function of the torque against speed of a motor which imposes a periodic force on the bar. The

slope of this curve is among the important physical properties of the system. The nonlinear restoring force is denoted as "hard" when the nonlinearity parameter is positive and as "soft" when the parameter is negative. The results of the analogue computer simulation are illustrated and discussed, selecting the behaviour in the resonance region where the interaction of the oscillating system with the source of energy is most pronounced. The three cases of hard, soft and zero restoring force are considered separately. The main result of the present investigation is a broader view of the nonlinearity parameter limiting the amplitude of parametric oscillations. In systems considered here, the factor which limits the amplitude of parametric oscillations is the nonlinear link between the energy source and the oscillating system. This link varies with the variation of the steepness of the characteristic curve of the energy source, so that parametric oscillations with limited amplitudes can be obtained by an appropriate variation in the steepness of the energy source curve. There are 11 figures.

SUBMITTED: December 26, 1961
Card 3/3

S/114/62/000/004/006/008
E114/E554

26.2120

AUTHOR: Frolov, K.V., Engineer

TITLE: Some problems of measuring stresses in turbine blading in service

PERIODICAL: Energomashinostroyeniye, no.4, 1962, 33-37

TEXT: The author describes improved methods of attaching wire-wound strain gauges for measuring stresses in moving turbine blading developed by the LMZ. Basically the strain gauge is made of constantan wire 0.03 mm diameter, wound on paper base with a 2 mm radius loop left at the point of attachment to the tails and impregnated with phenolic plastic glues. Depending on the application the strain gauge is protected by a piece of textile mesh or a brass mesh embedded in the plastic. Strain gauges attached to moving blades of turbines and working in steam are protected by a steel foil enclosing the gauge and welded to the blade. Special methods of welding were developed which resulted in negligibly small areas of degraded metal - each spot weld took about a millisecond. The steel foil also protects the strain gauge from interference and static electrical fields. The

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Some problems of measuring ... S/114/62/000/004/006/008
E114/E554

data are transmitted by an amplitude modulated radio transmitter and receiver suitable for speeds of 0-6000 r.p.m., and using 2-ring antenna - one insulated ring on the shaft and one stationary ring. Vibrations, droplets of water or oil in the gap between the rings vary the capacitance of the antenna system and cause difficulties. If these are too great, frequency modulation has to be used. Any commercially available f.m. receivers are suitable. Power to the transmitter is supplied through slip ring contacts, but since these carry relatively high voltage and not the weak signals, they do not introduce inaccuracies. Solenoid operated step-by-step switching arrangement allows the transmitter to be connected to each strain gauge in turn. The apparatus is suitable for use at temperatures up to 200°C. There are 7 figures and 2 tables.

Card 2/2

FROLOV, K.V., kand. tekhn. nauk

Investigating the resonance properties of a parametric vibratory system. Nauch. trudy MTILP no.24:201-208 '62. (MIRA 16:7)

1. Kafedra detaley mashin Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti.
(Vibration)

Inst technological light industry

MIKITYUK, Ye.P.; BARDASHEV, S.P.; PASECHNIKOV, N.S.; APIN, L.R.; PETROV, V.N.; DEMIDENKO, Ye.I.; MITROVICH, V.P.; FROLOV, K.V.

Author's abstracts of dissertations. Vest.mashinostr. 42 no.7:87-88 Jl '62. (MIRA 15:8)

1. Kiyevskiy politekhnicheskiy institut (for Mikityuk). 2. Moskovskiy aviatsionnyy institut imeni Sergo Ordzhonikidze (for Bardashev). 3. Leningradskiy sel'skokhozyaystvennyy institut (for Pasechnikov). 4. Moskovskiy stankoinstrumental'nyy institut (for Apin, Mitrovich). 5. Chelyabinskiy politekhnicheskiy institut (for Petrov). 6. Gor'kovskiy politekhnicheskiy institut imeni A.A.Zhdanova (for Demidenko). 7. Rizhskiy politekhnicheskiy institut (for Frolov). Riga

(Bibliography--Mechanical engineering)

ACCESSION NR: AT4017772 S/3037/63/003/000/0498/0513

AUTHOR: Frolov, K. V. (USSR)

TITLE: Simulation of the resonance properties of some autonomous nonlinear oscillatory systems

SOURCE: International Symposium on Nonlinear Oscillations. Kiev, 1961. Prilozheniya metodov teorii nelineyny*kh kolebaniy k zadacham fiziki i tekhniki (Applying methods of the theory of nonlinear oscillations in problems of physics and technology); trudy* simpoziuma, v. 3. Kiev, Izd-vo AN UkrSSR, 1963, 498-513

TOPIC TAGS: automation, control system, nonlinear oscillation, autonomous nonlinear oscillation, resonance, oscillatory system resonance, simulation, resonance simulation, analog computer

ABSTRACT: The fundamental results are given of an investigation of induced oscillatory phenomena in systems with nonlinear characteristics of elastic couplings and in systems with periodically changing parameters on analog computers. The oscillations were excited by an energy source having an assigned characteristic. The relation of this characteristic to the oscillatory system is considered, as well as its effect on the stability of periodic stationary oscillations at resonance.

The point is made that the joint examination of the oscillatory with the energy

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ACCESSION NR: AT4017772

source leads to entirely new concepts of great scientific and practical importance. Thus, for example, the classical co..cept of the stable and unstable states of nonlinear oscillatory systems and of the unlimited increase of amplitudes in parametric systems at resonance corresponds to an energy source (motor) with an unlimited margin of power. By properly selecting the energy source characteristics, stable oscillations can be obtained where they were considered unstable, and vice versa. It is also possible to achieve limited amplitude of parametric oscillations at resonance. This paper is devoted to the further study of the resonance properties of oscillatory systems dependent on the energy source (motor) of the induced oscillations. A study was made of the motion equations of a nonlinear and parametric system on analog computers and on mechanical models. Two systems were simulated: a system with a nonlinear characteristics of elastic couplings; and 2) a system with periodically changing parameters. The problem was studied for both small and large nonlinearities, and unstable operating modes were examined. It was established that the influence of the slope of the momentary characteristics of the energy source on the stability of system resonance modes is of essential importance. The regions of stable and unstable characteristic slopes were determined. On the basis of the data derived, it is possible to determine the motion modes of the system if the characteristic slope of the energy source is known, and, vice versa, it is possible to determine the proper energy source for a desired kind of motion. The report is interesting primarily because of the results obtain-

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ACCESSION NR: AT4017772

ed, which have a direct bearing on a whole number of oscillatory systems of the type considered. In addition, the successful use of a modern research technique - the analog electronic computer - deserves special attention. "The work was carried out in the Institut mashinovedeniya AN SSSR (Institute of Machine Design) using the electronic equipment of the Laboratoriya kolebaniy instituta mekhaniki MGU (Oscillation Laboratory, Institute of Mechanics), to the associates of which the author expresses his thanks." Original article has: 14 figures, 4 formulas and 2 tables.

ASSOCIATION: none

SUBMITTED: 00	DATE ACQ: 28Feb64	ENCL: 00
SUB CODE: IE, MM	NO REF SOV: 007	OTHER: 003

Card 3/3

[illegible], L.V., kand. tekhn. nauk, dotsent

Electromagnetic system vibrator for the excitation of torsional vibrations. Nauch. trudy MTILP no.29 275-277 '64. (MIRA 18:4)

1. Kafedra detaley mashin Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti.

VAGATSOV, R.D.; SINEV, A.V.; FROLOV, K.V. (Moscow):

"The transverse bending of multilayered beams with viscous friction between the layers".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964.

FROLOV, K.V. (Moskva)

Reducing vibration amplitude of resonance systems by controlled change of parameters. Mashinovedenie no.3:38-42 '65.
(MIRA 18:6)

GANIYEV, R.F. (Moskva); FROLOV, K.V. (Moskva)

A typical problem of vibration damping in a nonlinear setup.
Mashinovedenie no.4:17-23 '65. (MIRA 18:8)

L 32637-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/EWP(j)/T/EWP(k) IJP(c) WW/EM/GD/RM

ACC NR: AT6010822 SOURCE CODE: UR/0000/65/000/000/0149/0158

49
45

AUTHORS: Vaganov, R. D.; Sinev, A. V.; Frolov, K. V.

ORG: none

TITLE: Certain characteristics of transverse shear of multilayered beams, the layers of which are joined by a deformable glue

SOURCE: Moscow. Institut mashinovedeniya. Kolebaniya i prochnost' pri peremennykh napryazheniyakh (Vibrations and stability under variable stresses). Moscow, Izd-vo Nauka, 1965, 149-158

TOPIC TAGS: material behavior, composite beam, sandwich structure, shear strength, adhesion layer, material strength

ABSTRACT: A study is made of certain features of the transverse shear of composite beams. The work was conducted in the Laboratory of Dynamic Strength of the State Scientific Research Institute of Machine Behavior (Gosudarstvennyy nauchno-issledovatel'skiy institut mashinovedeniya). It is hypothesized that, up to a particular value of tangential stresses τ_0 (see Fig. 1) in the plane of adhesion, the glue rigidly bonds the layers. From the moment that the stress τ_0 is reached, plastic flow of the adhesive and slip between layers 1 and 2 (see Fig. 2) commence. This statement of the problem presupposes that the glue corresponds to a model of a "stiff plastic body" (L. M. Kachanov, Osnovy teorii plastichnosti. M. GITTL, 1956),

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and the thickness of the adhesive is small in comparison with the thickness of the bonded layer and thus can be ignored. Basic equations of shear of an infinitely wide two-layered plate are written as

$$2GU = -\frac{\partial F}{\partial x} + 2\alpha\phi,$$

$$2GV = -\frac{\partial F}{\partial y},$$

where U and V are displacements in the X and Y directions. The stresses are

$$\sigma_x = \frac{\partial^2 F}{\partial y^2} + \alpha\frac{\partial \phi}{\partial x},$$

$$\sigma_y = \frac{\partial^2 F}{\partial x^2} - \alpha\frac{\partial \phi}{\partial x},$$

$$\tau_{xy} = -\frac{\partial^2 F}{\partial x\,\partial y} + \alpha\frac{\partial \psi}{\partial y},$$

$$\sigma_z = \frac{2-\alpha}{2}\sigma_x.$$

where $F = \phi + \psi$, and $\phi(x, y)$ and $\psi(x, y)$ are harmonic functions. Two sets of related functions are stated: the first gives expressions for stresses and displacements arising from elastic deformation of the body; the other accounts for

Card 2/3

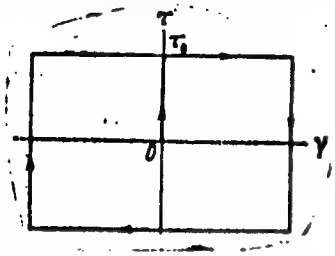

Fig. 1. Assumed dependence of tangential stress τ.

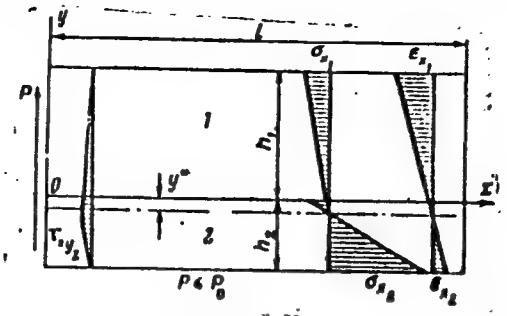

Fig. 2. Diagram of transverse shear of an infinitely wide two-layered plate.

plate distortion as a solid body. Several conditions of stress and deformation are developed in demonstration of the system solution. A description of an experimental method is given, and plots of longitudinal deformations of composite beams are shown. The authors thank mechanics V. I. Tereshchenko and B. N. Kashkov and laboratory technician N. O. Al'perova, who took part in the work, and N. P. Kandel', who directed the fabrication of the special double-layered samples. Orig. art. has: 27 equations and 7 figures.

SUB CODE: 13/ SUBM DATE: 05Aug65/ ORIG REF: 007/ OTH REF: 002

Card 3/3

ACC. NR: AP6034620 SOURCE CODE: UR/0380/66/000/006/0059/0065

AUTHOR: Safronov, Yu. G. (Moscow); Frolov, K. V. (Moscow)

ORG: none

TITLE: Vibration analysis of the cylinder block of an axial piston pump

SOURCE: Mashinovedeniye, no. 6, 1966, 59-65

TOPIC TAGS: vibration analysis, vibration measurement, axial pump, mechanical vibration, machine vibration, hydraulic pump, strain gage

ABSTRACT: An experimental method for determining the clearance between the cylinder block and the distributor of an axial piston pump by the use of strain gages is described. With the experimentally derived results and oscillograms it is possible to determine the nature of the vibrations of a pump's cylinder block in a steady or transitional stage of operation. In this analysis, a dynamic model of a cylinder block on an elastic oil layer was used. The motion of the investigated system, having four degrees of freedom, was defined by a system of differential equations. Results showed that under all operating conditions the nine-cylinder block of the pump running at 1000 rpm developed a vibration frequency of 150 hz, which coincided with the first harmonic of the hydraulic force pressing the cylinder block against the distributor during operation. Results indicated that an increased load on the pump increased

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the vibration amplitude of the cylinder block. The oscillograms showed that during compression the average clearance between the distributor and cylinder block decreased and increased during intake. The described experimental method is recommended for investigating very small clearance variations in axial-piston pumps. The criteria of this article may be of interest for design studies on new hydraulic axial piston equipment. Orig. art. has: 5 figures. [WA-98]

SUB CODE: 13, 20/ SUBM DATE: 15Dec65/ ORIG REF: 006/

Card 2/2

ACC NR: AP6034620 SOURCE CODE: UR/0380/66/000/006/0059/0065

AUTHOR: Safronov, Yu. G. (Moscow); Frolov, K. V. (Moscow)

ORG: none

TITLE: Vibration analysis of the cylinder block of an axial piston pump

SOURCE: Mashinovedeniye, no. 6, 1966, 59-65

TOPIC TAGS: vibration analysis, vibration measurement, axial pump, mechanical vibration, machine vibration, hydraulic pump, strain gage

ABSTRACT: An experimental method for determining the clearance between the cylinder block and the distributor of an axial piston pump by the use of strain gages is described. With the experimentally derived results and oscillograms it is possible to determine the nature of the vibrations of a pump's cylinder block in a steady or transitional stage of operation. In this analysis, a dynamic model of a cylinder block on an elastic oil layer was used. The motion of the investigated system, having four degrees of freedom, was defined by a system of differential equations. Results showed that under all operating conditions the nine-cylinder block of the pump running at 1000 rpm developed a vibration frequency of 150 hz, which coincided with the first harmonic of the hydraulic force pressing the cylinder block against the distributor during operation. Results indicated that an increased load on the pump increased

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SUB CODE: 13, 20/ SUBM DATE: 15Dec65/ ORIG REF: 006/

Card 2/2

ACC NR: AP7002929 SOURCE CODE: UR/0020/66/171/006/1293/1296

AUTHOR: Dimentberg, M. F.; Frolov, K. V.

ORG: Institute of Problems of Mechanics, AN SSSR, State Scientific Research Institute of Machines (Institut problem mekhaniki AN SSSR, Gosudarstvennyy nauchno-issledovatel'skiy institut mashinovedeniya)

TITLE: The Sommerfeld effect in a system with a randomly varying characteristic frequency

SOURCE: AN SSSR. Doklady, v. 171, no. 6, 1966, 1293-1296

TOPIC TAGS: elastic medium, oscillation, linear differential equation, approximation method

ABSTRACT: A study is made of the Sommerfeld effect observed in the oscillating behavior of a motor rotor supported elastically. Resonance properties of the linear oscillating system of differential equations, brought about by forces of inertia of an unbalanced rotor with random variation of the characteristic frequency, are studied. The solution indicates that the Sommerfeld effect may be reduced under certain conditions when the parameters are randomly varied; that is, the rotor may pass beyond the critical resonance state without the addition of supplemental energy to the motor. The method of averaging is used to find the mathematical expectations for the

UDC: 531.395

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substituted variables, the solution for which is given in standard form. Oscillograms are presented to show the results of experimental verification. Presented by Academician A. Yu. Ishlinskiy on 18 February 1966. Orig. art. has: 8 formulas, 2 figures.

SUB CODE: 13,12/ SUBM DATE: 11Feb66/ ORIG REF: 009/ OTH REF: 001

Card 2/2

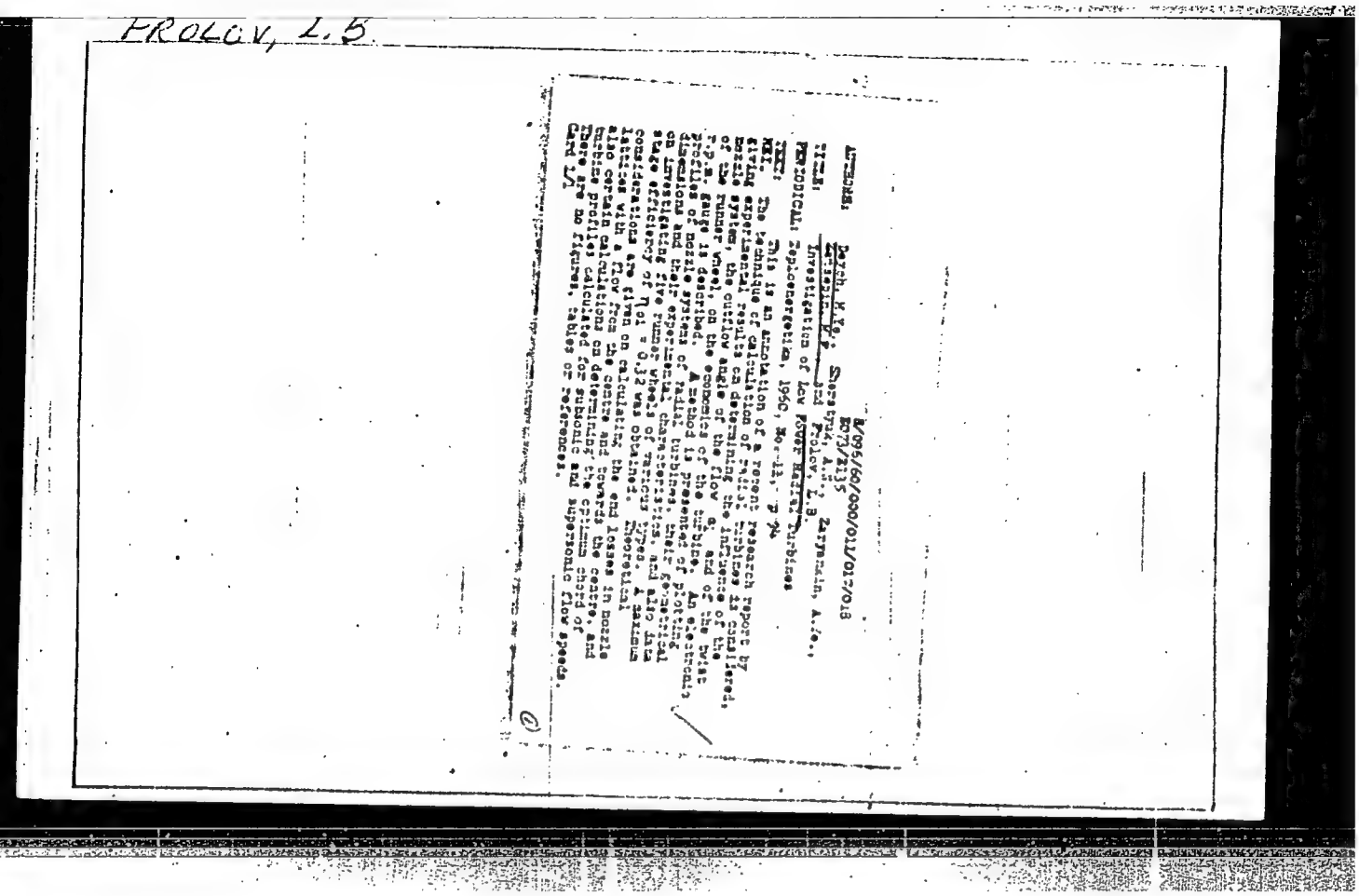
1. FROLOV, L., Eng.
2. USSR (600)
4. Ensilage
7. Over-all mechanization of silage production. MTS 13 No. 5, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

FROLOV, L.A., inzh.

Problem of the movement of loose materials on a rotating horizontal plane. Vest.mash. 41 no.2:24-27 F '61. (MIRA 14:3)

1. NIITsMMASH, g. Kuybyshev.
(Dynamics)



FROLOV, L.S.

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S/114/60/000/005/006/006
E194/E255

AUTHORS: Deych, M.Ye., Doctor of Technical Sciences, Zaryankin, A. Ye., Candidate of Technical Sciences, Lebedev, A. Ye., Candidate of Technical Sciences and Frolov, L. B., Engineer

TITLE: An Instrument for Measuring the Torque, Speed and Power on High-Speed Turbines

PERIODICAL: Energomashinostroyeniye, 1960, No. 5, pp. 43-47

TEXT: In development work on blading very high speed experimental turbines are used, and the customary methods of measuring torque are often inapplicable. It is most convenient in such cases to measure torque in terms of the angular strain of the rotating shaft, but when the speed is of the order of 35 000 r.p.m. it is very difficult to take current from moving contacts on the rotor. An investigation of the operation of the various pickups carried out in the Moscow Power Engineering Institute showed that satisfactory results may be obtained with induction pickups, which are easily fitted to both experimental and regular production turbines. Impulses from these pickups can be used to measure both torque and speed. Two toothed magnetic

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S/114/60/000/005/006/006
E194/E255

An Instrument for Measuring the Torque, Speed and Power on High-Speed Turbines

discs are fitted to the rotating shaft and as they turn they induce impulses in the pickups. When there is no strain and the shafts are not twisted, the pickups are arranged with a phase displacement of half the pitch of one of the teeth in the disc. As the machine is loaded and the shaft twists the phase relationship between the two series of impulses alters and is measured. The instrument has two shaping circuits, each containing an amplifier, a limiter, a differentiating circuit and an impulse generator. This shaper circuit serves to amplify the pickup signal and to convert it into a signal of standard shape with a steep wave-front. There is a comparator device that measures the phase relationship between the impulses. The same pickups are used for speed measurement. The output of the shaping circuits is applied to a trigger, which is a switching device controlling the charging and discharging of capacitors. The mean charging current of the capacitors is proportional to the speed. The reliability of the measurements depends on the construction of the

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S/114/60/000/005/006/006
E194/E255

An Instrument for Measuring the Torque, Speed and Power on High-Speed Turbines

pickups. The pickup base is made of permalloy sheet 0.1 mm thick clamped between two diamagnetic holders; it carries a measuring coil of 100-500 turns. The output of the measuring coils has a saw-tooth wave-shape, the amplitude of which increases with the speed. A schematic circuit of the instrument is given and the various units, namely, the shaping unit, the torque measuring unit, the speed measuring unit and the power measuring unit are briefly described. An experimental rig for testing the device was set up. It consisted of a motor driving the shaft with toothed discs which in turn drove a generator, using special couplings. The arrangement was such that a calibration curve could be obtained of the instrument reading as a function of the pickup displacement, as plotted in Fig. 7. The graph shows a linear relationship between the instrument reading and the phase displacement. In measuring torque with an electronic dynamometer good results could be obtained by using torsion couplings, the design of which is briefly described. In preliminary tests the

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sensitivity was 100 microns displacement over the full scale, corresponding to a maximum angle of twist of 0.1°; however, the readings were not stable and depended on the speed of the disc. When the sensitivity was reduced to 0.5° of twist for full scale the readings were stable and independent of speeds. Good results can also be obtained using photo-electric pickups with the shafts rotating at any speed, including low speeds. In some cases the toothed wheels may be replaced by magnetic inserts of various kinds: the load on the flexible couplings of a turbine type 8K-100 (VK-100) can be measured in this way. By using the instrument on power station turbines feeding into a common system it is possible to investigate transient processes in the machines when the system load changes, and to obtain satisfactory data about the operation of the governor system. There are 8 figures and 3 references; 1 Soviet and 2 non-Soviet.

Card 4/4

27085
S/143/61/000/001/004/006
A207/A126

26.2194

AUTHORS: Frolov, L. B., Engineer, Frolova, Z. V.

TITLE: Electronic automatic safety device

PERIODICAL: Energetika, no. 1, 1961, 59 - 64

TEXT: A description is given of the new safety device used in the protection of turbines against overspeeding. It is intended for high-speed, mostly experimental, turbines, but can be used in other machines as well. Contrary to the more widely used mechanical automatic safety devices, the machine in question is based on electronics and has a high reliability. The turbines are protected in the following manner: a transmitter of sinusoidal signals of the induction type is located on the turbine shaft. Its frequency is proportional to the turbine rotations. The signal from the transmitter is fed to the automatic safety device. With an increase in the number of revolutions of the turbine close to the limit, the frequency of the transmitter signal reaches a frequency of f_0, to which the automatic device is set. The latter switches on an electromagnet with a spring, acting then upon the valve. In the position "set", the electromagnet is switched on and presses the spring. At the signal "stop", the relay of the automatic device

Card 1/4

Electronic automatic safety device

breaks the circuit of the electromagnet. the spring moves the valve, acting through a row of intermediate links on the vent. The vent has a special signalling device. If the vent has not closed after a certain period of time by control of the automatic device, the relay comes into action, which switches in the auxiliary elements of the accident-prevention device of the turbine. The principle of the device is as follows: an intensified signal is fed to the double-T bridge and to the phase-shifting chain of the compensating channel. Intensified signals from the T-shaped bridge and from the phase-shifting chain, are fed to the phase detector. It is assumed that the difference of the main and compensating channels is equal to zero at frequencies less than f_o. At frequencies greater than f_o, the relay R_1, disconnects the electromagnet of the performing element. From the main amplifier, the signal is fed also to the selective amplifier of the auxiliary channel. The latter is an amplifier with a negative feed-back connection through the double-T bridge. The outlet of the amplifier through the locked detector, enters relay R_2. At a frequency of f_o relay R_2 begins to work regardless of R_1, disconnecting the circuit of the electromagnet of the performing element. A change in the capacity limit is brought about by regulating the frequency f_o of the bridge which, in turn, is carried out by blocking alternating resistances, (for smooth change-over) and switches (for fixed values). The regulating of f_o of both channels and the generator is carried out by a handle and has a graduated scale. The bridge is made of

Card 2/4

Electronic automatic safety device

temperature-resistant elements. The time relay is started by a signal of any of the relays R_1 and R_2, and after a certain period of time a pulse is fed to the auxiliary circuits of the valve closing. If in this period of time the signalling device for closing the valve has begun to function, then the circuit leading to the performing elements is broken. It is pointed out that a failure of two specially selected elements could deprive the turbine of its protection. This deficiency can be eliminated and the dependability of the device increased by introducing a block with four automatic protection units. Thus, the instrument has a design of assembly units. The instrument also has a periodic service checker which is a CA -60 (SD-60) motor, with a reducing gear and a contact drum. The tests were carried out on an experimental radial turbine at 15,000 - 20,000 rpm. The following advantages of the electronic device are listed as compared to the widely-used mechanical type: 1) it can be used in high-speed machines, 2) it is easy to check, can be tested during performance, 3) the capacity limit can be easily changed, 4) it can function without a lubricating system. The disadvantages of the device are: the comparatively complex scheme, which is connected with a lesser reliability of the parts. There are 4 figures.

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27085

S/143/61/000/001/004/006
A207/A126

Electronic automatic safety device

ASSOCIATION: Moskovskiy ordena Lenina energeticheskiy institut, Kafedra parovykh i gazovykh turbin (The Moscow Order of Lenin Power Engineering Department of Steam and Gas Turbines)

SUBMITTED: March 21, 1960

Card 4/4

39027
S/105/62/000/007/001/004
E200/E135

9.7150

AUTHORS: Bogolyubov, V.E., Doctor of Technical Sciences;
Shamayev, Yu.M., Candidate of Technical Sciences; and
Frolov, L.B., Engineer

TITLE: Analysis of the operation of a single-pulse shift-register taking into account the nonlinearity of the ferromagnetic material

PERIODICAL: Elektrichestvo, no.7, 1962, 1-5

TEXT: Guidelines are given on the selection of component parameters for a single-pulse magnetic-core shift-register with a capacitive delay in the loop; the nonlinear behaviour of the ferrite is taken into account. Starting from the empirical equation for the magnetization impulse

$$Q(B) = \int_0^t (H - H_0)\, dt$$

expressed by Yu.M. Shamayev et al (Izv.AN SSSR, seriya fizich., v.23, no.3, 1959) as:

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Analysis of the operation of a ....

$$Q(B) = \frac{1}{\delta} \operatorname{Tan}^{-1} \frac{B}{B_s} - \frac{1}{\delta} \operatorname{Tan}^{-1} \frac{B_{initial}}{B_s} \quad (4)$$

where $\delta = r_m/B_s$, and using the circuit shown in Fig.2, the authors derive the following criteria for the principal circuit parameters:

$$\frac{w_1^2 + w_2^2}{R} > 3 \times 10^6 \, C w_2^2 \quad (11)$$

$$w_{2\ opt} = \sqrt{w_1^2 + \frac{R\ell}{Sr\ (B_r)}} \quad (12)$$

$$RH_o \gg \frac{Q(B_r)}{C} \quad (24)$$

$$C \geqslant \frac{H_o S B_r w_1^2}{R^2 \ell} \quad (25)$$

Card 2/5

where: S is the cross-sectional area of the core; ℓ is the length of the core; u_C is the voltage across the capacitor; w_1 and w_2 are the number of turns in the input and output windings respectively; B_r is the residual induction. Calculations show that the resistance R has a great effect both upon the process of charging the capacitor and the remagnetization. At large values of R remagnetization does not occur at all. Consequently R should not exceed the upper limit found from inequality (11). It should not be very small, since then the voltage $u_{C_{max}}$ decreases sharply and, at very low values of R and small capacitances, remagnetization again fails to occur. In the illustrative case considered the size of the resistance R does not affect greatly the mode of operation while it remains between the limits of 100 - 300 ohms. Within these limits it is possible to select the actual value of R from other considerations (minimal power loss, noise stability, etc). The size of the capacitor has the greatest effect upon the speed of operation of the register and from this viewpoint the capacitance should be

chosen as small as possible. However, a reduction of C will lead to a lowering of the stability of the remagnetization, as can be seen from inequalities (24) and (25). To obtain the maximum stability one should select the value of the capacitance by taking these conditions into consideration, yet without exceeding the bounds of inequality (11). Relation (12) shows that w_2 should exceed w_1. As w_1 increases, at first the stability of operation of the register is improved, and then the effect of w_1 upon the stability is reduced. The influence of the number of turns w_2 is indirect; expressing itself through the voltage uC_m. To obtain the highest possible value of uC_m one should take neither very low nor very high values of w_2. Optimal w_2 lies close to the value determined by Eq.(12). As H_m increases the maximal voltage on the capacitor increases and, consequently, the reliability of operation of the register is improved. At the same time the operating speed of the shift-register is increased but the power requirements are raised. There are 4 figures and 2 tables.

Card 4/5

39027

Analysis of the operation of a ... S/105/62/000/007/001/0C4
E200/E135

ASSOCIATION: Moskovskiy energeticheskiy institut
(Moscow Power Engineering Institute)

SUBMITTED: July 17, 1961

Fig.2

4

Card 5/5

ACCESSION NR: AP4014406 S/0143/63/000/012/0064/0072

AUTHOR: Deych, M. Ye. (Doctor of technical sciences, Professor); Zaryankin, A. Ye. (Candidate of technical sciences); Mikhnenkov, L. V. (Engineer); Frolov, L. B. (Engineer)

TITLE: Effect of throttling ring on the operation of a radial-axial turbine

SOURCE: IVUZ. Energetika, no. 12, 1963, 64-72

TOPIC TAGS: turbine, radial axial turbine, turbine power control, throttling turbine control, throttling ring turbine control

ABSTRACT: Controlling turbine power by the introduction of a throttling ring between the nozzle-box assembly and the rotor was experimentally investigated. A turbine described by A. Ye. Zaryankin, et al. (IVUZ. Energetika, no. 8, 1961) was used at 1.82 pressure drop and 0.17, 0.282, and 0.47 relative ring throttling. At 47% throttling, the turbine efficiency was 15% lower. The

Card 1/2

ACCESSION NR: AP4014406

theoretical explanation of losses associated with this type of throttling is given in the article. The above-described "attempt to throttle the flow in the gap between the nozzle box and the rotor did not yield favorable results .... and can be recommended for cases where reliable control devices of minimum size are required. The last requirement may prove decisive in transportation plants...." Orig. art. has: 7 figures and 13 formulas.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power-Engineering Institute)

SUBMITTED: 19Jun63 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: PR, AP NO REF SOV: 005 OTHER: 000

Card 2/2

FROLOV, L.B.

Phase method for measuring torque. Trudy MEI no.47:209-216 '63.
(MIRA 17:1)

FROLOV, L.B.; KHROMOV, M.K.; VORONIN, V.G.

Using the electron torsion meter for determining the rolling resistance of tires. Kauch. i rez. 24 no.9:34-38 '65.
(MIRA 18:10)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

AMELIN, S.V., prof., doktor tekhn.nauk (Leningrad); YAKOVLEV, V.F., doktor tekhn.nauk (Leningrad); SEMENOV, I.I., kand.tekhn.nauk (Leningrad); FROLOV, L.N., inzh. (Leningrad)

Frogs with movable parts. Zhel.dor.transp. 47 no.12:51-55 D '65. (MIRA 18:12)

FROLOV, L.V.

Device for measuring the torque on high-speed shafts. Izm.tekh. no.8:36 Ag '62. (MIRA 16:4)
(Torque--Measurement)

FROLOV, L.V., inzh.; EPSHTEYN, S.M., inzh.; POLCHEKAYEV, V.A., inzh.

Mesh-reinforced vault sections. Transp. stroi. 11 no.10:29-32 O '61. (MIRA 14:10)
(Escalators) (Tunnels) (Reinforced concrete construction)

FROLOV, M.

Frolov, M. - "In one's own factory", (On the Leningrad Krasnyy Vyborzhets Plant, outline), Ogonek, 1949, No. 17, p. 13-14.

SO: U-4110, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 19, 1949).

FROLOV, M., inzh.

Our technical improvements. Sil'. bud. 9 no.9:7-8 S '59.
(MIRA 12:12)

1.Selidovskaya mezhkolkhoznaya stroitel'naya organizatsiya Stalinskoy oblasti.
(Brickmaking machinery)

FROLOV, M., podpolkovnik

An aid to academy teachers. Komm. Vooruzh. Sil 46 no.14:54-57 Jl '65. (MIRA 18:

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000513810004-9"

FROLOV, M.

Secret of success lies in the proper organization of production. Sel'. stroi. 16 no.6:18-19 Je '61. (MIRA 14:7)

1. Predsedatel' soveta mezhkolkhoznoy stroitel'noy organizatsii Komsomol'skogo rayona Ivanovskoy oblasti.
(Komsomolskiy District--Construction industry)

FROLOV, M., inzh.

How we improve the quality of clay roofing tiles. Sil'.bud. 10 no.5:8 My '60. (MIRA 13:7)

1. Selidovskaya mezhkolkhoznaya stroitel'naya organizatsiya Stalinskoy oblasti.
(Selidovka--Tiles, Roofing)

LILIYENTAL', A.A., grossmeyster; KISELEV, P., dispetcher, shakhmatist pervogo razryada (Makeyevka, Donetskoy obl.); FROLOV, M., shakhmatist pervogo razryada (Gubkin Belgorodskoy obl.)

Chess. Sov.profsoiuzy 19 no.3:29 F '63. (MIRA 16:2)
(Chess clubs)

FROLOV, M., inzh.

Establishing a montly schedule for a motortruck driver. Avt. transp. 43 no.1:29-30 Ja '65. (MIRA 18:3)

1. Belgorodskoye avtomobil'noye upravleniye.

FROLOV, M.A. (Moscow).

Surgical tooth extraction. Stomatologiia no.4:48-49 Jl-Ag '53.
(MLRA 6:9)
(Dentistry, Operative)

FROLOV, M.A.

Penicillin therapy for acute inflammatory processes of the maxillo-facial region. Stomatologiia no.1:61 Ja-F '55. (MLRA 8:5)

1. Iz Tsentral'noy stomatologicheskoy poliklinik (Moskva).
(PENICILLIN, therapeutic use,
maxillofacial dis.)
(JAWS, diseases,
ther., penicillin)
(FACE, diseases,
ther., penicillin)

FROLOV, M.A.

Surgical methods for closing a Highmore's antrum opened during tooth extraction. Stomatologiia 35 no.6:58 N-D '56 (MLRA 10:4)
(TEETH--EXTRACTION) (NOSE, ACCESSORY SINUSES OF--SURGERY)

DROZDOV, A.M.; MAKHACHASHVILI, A.I.; FROLOV, M.A., inzh. (g.Kaliningrad); LEONT'YEV, Yu.S.; POLITKO, K.I.

From the editor's mailbox. Zhel.dortransp. 42 no.9:95-96 S '60. (MIRA 13:9)

1. Stantsiya Olen'ye Oktyabr'skoy dorogi (for Drozdov). 2. Nachal'nik stantsii Melitopol' (for Makhachashvili). 3. Starshiy pomoshchnik nachal'nika stantsii Kamyshin Privolzhskoy dorogi (for Leont'yev). 4. Dezhurnyy stantsii Kamyshin Privolzhskoy dorogi (for Politko).

(Railroads)

FROLOV, M.A., inzh. (g.Kaliningrad)

Mechanical stand for gondola car repairs. Zhel.dor.transp. 43 no.2:65-66 F '61. (MIRA 14:4)
(Railroads--Repair shops)

Frolov, M. A.

Distr: 4E4F/4F1

900. Frolov, M. A. On the evaluation of ventilation apertures (in Russian), *Nauch. tr. Novocherkas. politekh. in-ta* 26, 17–33, 1955; *Ref. Zh. Mekh.* 1956, Rev. 5838.

In view of the absence of data for the [illegible] of the resistance [illegible] other, author has carried out special experimental studies on a laboratory scale, which enabled him to establish the dependence of the coefficient of resistance of the openings on the correspond[illegible] calculations for the dimensions of the [illegible] openings [illegible] as described, nomograms are presented. An example is given of the [illegible]

Translation, courtesy Ministry of Supply, England

Land Sect Lib

KARPOV, A.M., professor; FROLOV, M.A., kandidat tekhnicheskikh nauk; CHUKHONTSEV, N.F., starshiy prepodavatel'.

Analyzing a case of booster fan performance in a mine ventilation system. Ugol' 30 no.11:32-35 N '55. (MLRA 9:2)

1.Novocherkasskiy politekhnicheskiy institut.
(Donets Basin--Mine ventilation)

EROLOV, M.A.

KARPOV, A.M., professor; EROLOV, M.A., kandidat tekhnicheskikh nauk; CHUKHONTSEV, N.F., dotsent.

Improving the ventilation of a large anthracite mine. Nauch. trudy MPI 32:71-83 '55. (MLRA 10:2)

(Donets Basin--Coal mines and mining)
(Mine ventilation)

SOV/124-57-3-2898

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 3, p 38 (USSR)

AUTHOR: Frolov, M. A.

TITLE: On the Replacement of Ventilating Ports by Other Controlling Devices (O zamene ventilyatsionnykh okon inymi reguliruyushchimi ustroystvami)

PERIODICAL: Nauch. tr. Novocherkas. politekhn. in-ta, 1955, Vol 32, pp 85-97

ABSTRACT: A study is made of the possibility of replacing the ventilating ports, acting as regulating diaphragms for distributing the air in a mine among the various areas and mine cuts, by other devices called "portal apertures" by the author.

I. A. Shepelev

Card 1/1

FROLOV, M. A.

STEBAKOV, M.L.; FROLOV, M.A.

Improved methods of breakoff by undermining in continuous storage systems. Gor. zhur. no.12:6-7 D '56. (MLRA 10:1)

1. Gosudarstvennyy Institut gornokhimicheskogo syr'ya (for Stebakov)
2. Rudnik imeni Kirova (for Frolov).
(Mining engineering)

SOV/124-58-5-5244

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 5, p 42 (USSR)

AUTHORS: Frolov, M.A., Merkulov, V.A., Sergeyev, S.I., Khripkov, N.S.

TITLE: On the Effectiveness of Using Auxiliary Blowers to Combat Dust in Mines During Operation of UKT Combination Coal-cutting-and-loading Machines (Issledovaniye effektivnosti primeneniya vspomogatel'nykh ventilyatorov dlya bor'by s pyl'yu pri rabote kombaynov UKT)

PERIODICAL: Tr. Novocherkasskogo politekhn. in-ta, 1957, Vol 45/59, pp 91-112

ABSTRACT: Results are given of a study made of the effectiveness of using auxiliary blowers to combat dust in mines at sites where UKT combination cutting-and-loading machines are working slender seams of anthracite. Conditions were investigated at the working faces of several Donbass mines. The authors summarize their findings as follows: 1- The rate of air flow at a mine working-face when the auxiliary blower is turned off does not, as a rule, exceed 0.25-0.35 m/sec---which is not up to standard. 2- The use of auxiliary blowers makes is possible in some cases to reduce the dust content of the air in a mine shaft

Card 1/2

On the Effectiveness of (cont.)

by as much as 30-50%. 3- The dust content of the incoming current of supposedly fresh air prior to its arrival at the working faces (where the studies were being conducted) greatly exceeded the permissible limit from the point of view of health protection. 4- To combat dust effectively at sites where the combination cutting-and-loading machines are working slender, gently slanting seams of anthracite, the rate of air flow at the working faces must be increased to 0.7-1.0 m/sec.

Yu.A. Lashkov

1. Blowers--Effectiveness 2. Underground structures--Ventilation
3. Particles (Airborne)

Card 2/2

FROLOV, M.A., kand.tekhn.nauk

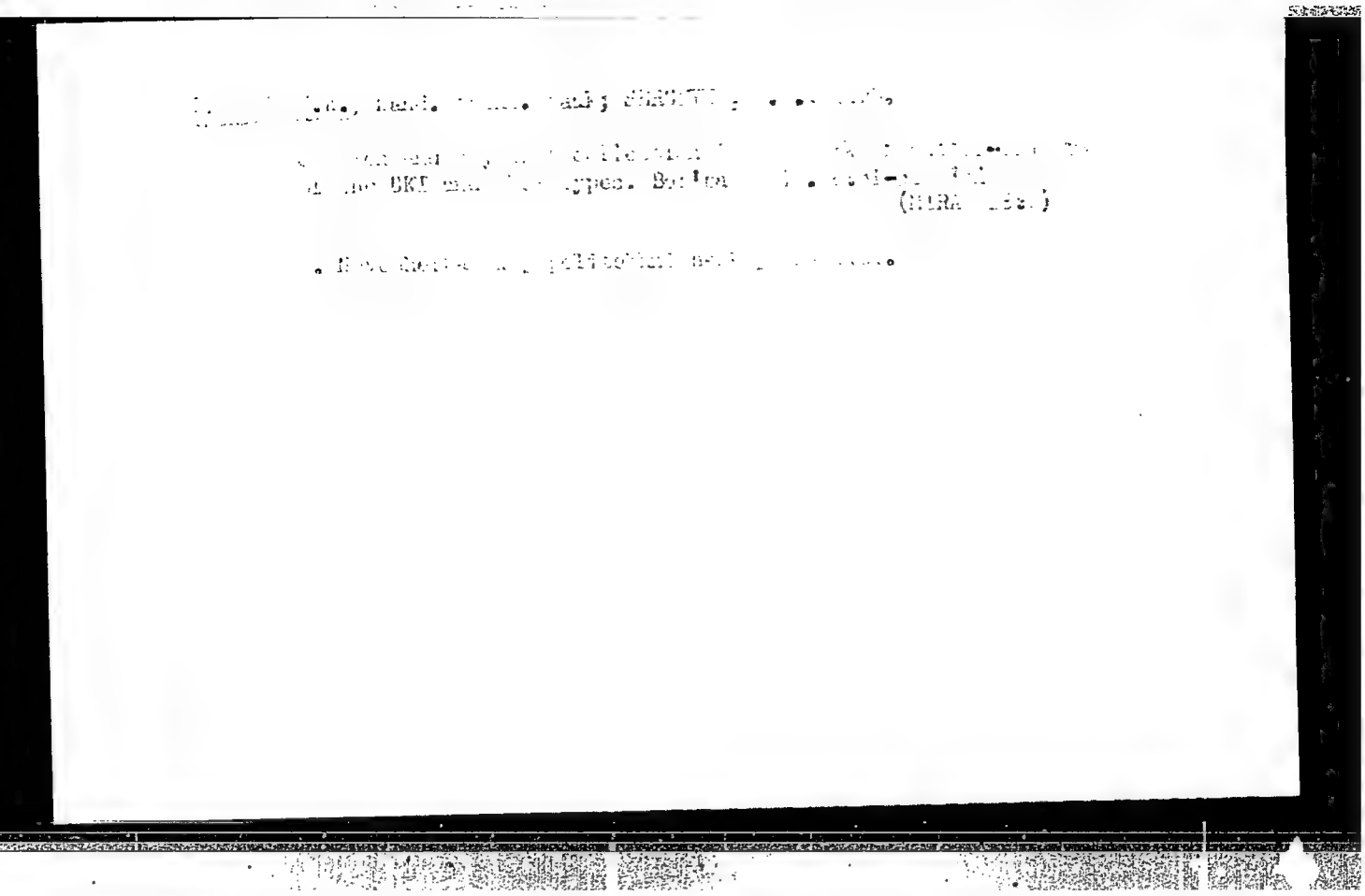
Research on the movement of a current of air through an air vent. (MIRA 14:3)
Trudy NPI 49:155-170 '59.

1. Kafedra rudnichnoy ventilyatsii i tekhniki bezopasnosti. Novocherkasskogo politekhnicheskogo instituta.
(Mine ventilation)

SHANOVSKAYA, S.S.; RASSOLOV, N.I.; BEKIRBAYEV, B.D.[deceased]; PETRUKHIN, P.M.; GRODEL, G.S.; FROLOV, M.A.; CHERVINSKIY, M.S.; BOBRITSKIY, V.P.; POLYANSKIY, I.P.; NIKITIN, V.S., otv. red.; LUCHKO, V.S., red.izd-va; SHKLYAR, S.Ya., tekhn. red.; MAKSIMOVA, V.V., tekhn. red.

[Handbook on controlling dust in coal mines]Spravochnoe posobie po bor'be s pyl'iu v ugol'nykh shakhtakh. [By S.S. Shanovskoi i dr.] Moskva, Gosgortekhizdat, 1963. 190 p. (MIRA 16:6)

(Mine dusts)



[illegible], [illegible], kand. tekhn. nauk

Analysis of some cases of the work of auxiliary fans in coal mines in the longwalls of nongaseous mines. Bezopas. tr. ugol. prom. no.7 '62. (MIRA 15:12)

1. Dnepropetrovskiy politekhnicheskiy institut.

L 16810-63

ACCESSION NR: AP3003263 S/0286/63/000/003/0031/0031

AUTHOR: Frolov, M. D.; Konstantinov, V. N.

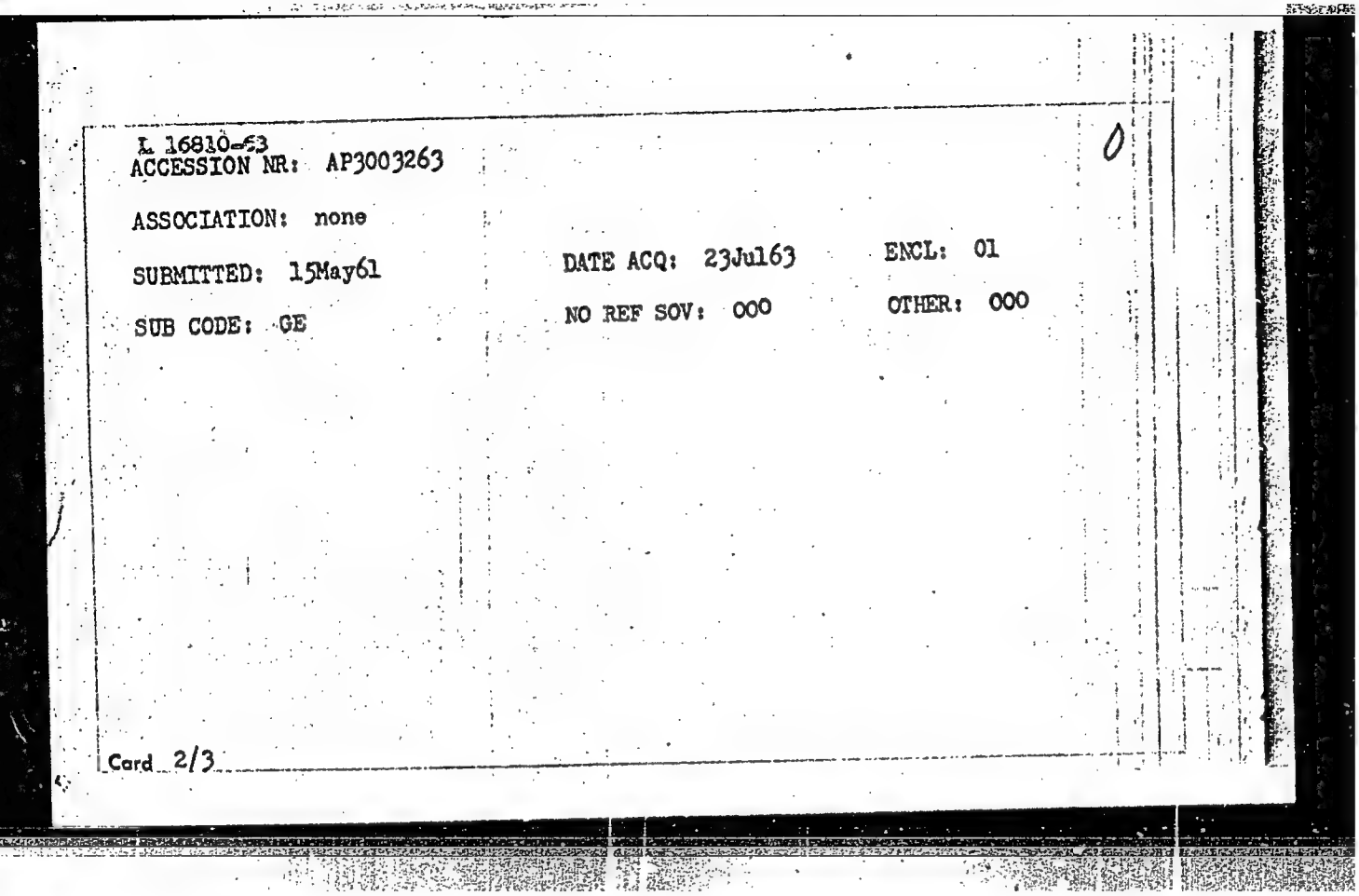
TITLE: Equalizer for angular velocities of rotation. Class H 02j; 21d sup 2, 42 sub 05. No. 152910

SOURCE: Byul. izobreteniy i tovarnykh znakov, no. 3, 1963, 31

TOPIC TAGS: equalizer, angular velocity, semiconductor, relay, voltage relay

ABSTRACT: Equalizer for angular velocities of rotation, in which thare is applied to two voltage relays, rectified envelopes of the beat voltages, which are shifted relative to each other by an angle, the sign of which determines the sequence of relay operation; its distinguishing feature is that in order to eliminate the need for rectifying the voltages applied to the equalizer, a voltage relays based on semiconductors and employed in the latter, the interlocking circuit between the voltage relays set up with the aid of a differentiating subcircuit and a supplementary triode. [Abstracter's note: complete translation.] Orig. art. has: 1 figure.

Card 1/3



L 16810-63
ACCESSION NR: AP3003263

ASSOCIATION: none

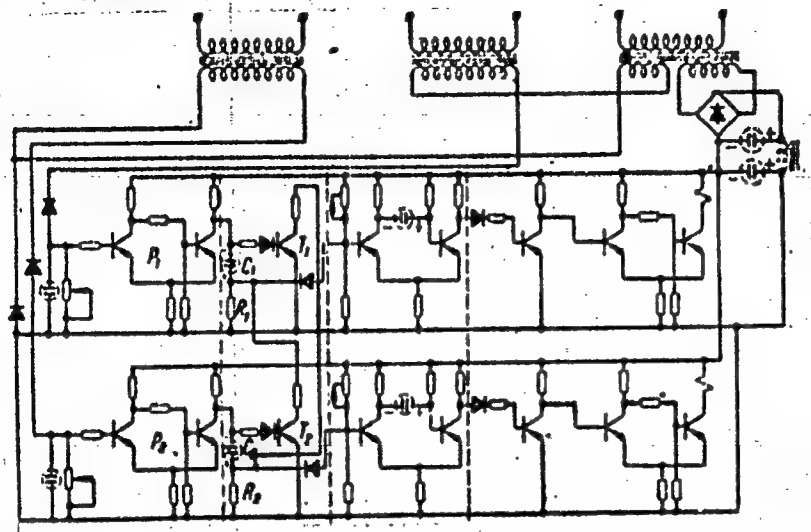
SUBMITTED: 15May61 DATE ACQ: 23Jul63 ENCL: 01

SUB CODE: GE NO REF SOV: 000 OTHER: 000

Card 2/3

L 16810-63
ACCESSION NR: AP3003263

ENCLOSURE: 1



P_1 and P_2 -- voltage relays; R_1-C_1 and R_2-C_2 -- differentiating subcircuits; T_1 and T_2 -- supplementary triodes.

Card 3/3

KLYUYEV, G.M., kand.tekhn.nauk; YUNITSKAYA, Ye.I., starshiy inzh.; RYAKOVA, E.Ya.; Prinimali uchastiye: PETROV, A.M.,; SHISHKIN, A.F.; KNAUS, O.M.; RUSAKOVA, R.A.; STEPANOVA, L.G.; KALINKIN, V.F.; GOPKALOVA, N.K.; SACHKOV, V.F.; FROLOV, M.F.; LUKASHOVA, T.T.; SAVKIN, P.S.

Grain-size distribution in the material produced by crushing rock. Sbor. trud. NIIZHelezobetona no.3:69-90 '60. (MIRA 15:2)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut zhelezobetonnykh izdelii, stroitel'nykh i nerudnykh materialov (for Petrov, Shishkin, Knaus, Rusakova, Stepanova, Kalinkin, Gopkalova, Sachkov, Frolov, Lukashova, Savkin).

(Stone, Crushed)

FROLOV, Matvey L'yovich, zhurnalist; ARKHAROVA, V.G., red.; LEVONEVSKAYA, L.G., tekhn. red.

["The winged guard"; a book of feature stories on heroic fliers] Krylataia gvardiia; kniga-reportazh o letchikakh-geroiakh. Leningrad, Lenizdat, 1963. 134 p. (MIRA 16:12)

(World War, 1939-1945—Aerial operations)

ZENCHENKO, V.P.; FROLOV, M.L.

Pneumatic pulse counter. Mashinostroitel' no.9:26 S '62. (MIRA 15:9)

(Calculating machines)

GERTS, Ye.V.; FROLOV, M.I.

Calculating pneumatic time relays. Stan. i instr. 35 no.12: 14-16 D '64 (MIRA 18:2)

FROLOV, M.L. (Moskva)

Structural synthesis of pneumatic systems of automatic machines taking into consideration the dynamics of their operation. (MIRA 18:5)
Mashinovedenie no.1:21-29 '65.

GERTS, Ye.V. (Moskva); KREYNIN, G.V. (Moskva); FROLOV, M.L. (Moskva)

Experimental determination of the consumption ratio of pneumatic systems. Mashinovedenie no.2:48-53 '65.

(MIRA 18:8)

GERTS, Ye.V.; FROLOV, M.I.

Dynamic investigation of timing devices in pneumatic systems of automatic machines. Teor. mash. i mekh. no.107/108:5-17 '65. (MIRA 18:7)

L 31286-66 EWP(k)/EWT(d)/EWT(m)/EWP(h)/T/EWP(l)/EWP(v) DJ/BC

ACC NR: AP6020245 SOURCE CODE: UR/0380/66/000/001/0051/0058

AUTHOR: Kreynin, G. V.(Moscow); Frolov, M. L.(Moscow)

ORG: none

TITLE: Determination of optimal parameters of a pneumatic hydraulic drive control system

SOURCE: Mashinovedeniye, no. 1, 1966, 51-58

TOPIC TAGS: pneumatic device, pneumatic control system, hydraulic equipment, reliability engineering, signal transmission, automatic control design

ABSTRACT: In order to overcome the shortcomings of electromagnetic control systems used for control of the hydraulic drives of machine tools, automatic production lines, etc., the USSR is now series-producing small pneumatic devices for this purpose, part of the USEPPA (Universal System of Elements of Industrial Pneumo-Automatics) system. They can be used to replace electromagnet relay systems. The changeover not only provides higher reliability of the control system; it also makes it more fire and explosion safe. Dividing the pneumatic control process into three stages (transmission of pneumatic signal from transducer to control system; processing of signals in control unit; transmission of output signal from control system to hydraulic drive system), the authors analyse the operation of such control systems step-by-step, to aid planners in designing such control systems. With proper selection of element parameters, they report, the speed of operation of such a control system can be of the same order as that of an electrical system. Orig. art. has: 6 figures and 5 formulas. [JPRS]

SUB CODE: 13, 09/ SUBM DATE: 12Sep65/ ORIG REF: 005 UDC: 62-525

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FROLOV, M.N., slesar'.

Cleaning device for steam-boiler pipes. Neftianik 2 no.5:23-24 My '57. (MLRA 10:5)

1. Bakinskiy neftepererabatyvayushchiy zavod im. Andreyeva.
(Pipes, Deposit in)

Frolov, M.N.

92-2-18/37

AUTHOR: Frolov, M.N., Mechanic

TITLE: Furnace Pipes Are Hoisted With the Aid of a Boring Machine (Pod"yem pechnykh truh pri pomoshchi bormashiny)

PERIODICAL: Neftyanik, 1958, 3 Nr 2, pp 16 (USSR)

ABSTRACT: In overhauling pipe stills the mechanics of the Baku refineries have been compelled until recently to lift and raise new pipes to the upper section of the furnace by hand. This operation required considerable effort and time. To facilitate this task the author, assisted by the turner P. Pogosov, worked out a method of hoisting furnace pipes with the aid of a boring machine previously used for pipe flaring. For this purpose the machine was slightly modified and equipped with additional roll and bush bearings, chains, hooks and other necessary parts. A pipe receiver was also installed at the upper section of the furnace. Two men are needed to handle the machine and to carry out the operation. The pipe is placed on the machine hooks which lift it to the upper section of the furnace, where it automatically rolls off due to its own weight. The suggested method of hoisting furnace pipes was accepted and introduced in the Nr 14

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